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22 JUL 1970

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Copy 9 of 13

17 JUL 1970

MEMORANDUM FOR: Director, CIA Reconnaissance Programs

SUBJECT: Program Progress Report

Forwarded herewith are three copies of the IDEALIST  
Program Progress Report for the period 1 April 1970 -  
30 June 1970.

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HAROLD F. KNOWLES  
Brigadier General, USAF  
Director of Special Activities

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Attachments -

As stated

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NRO review(s) completed.

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SAS/O/OSA [redacted] (15 July 1970)

Distribution:

- 1 - D/CRP
- 2 - D/CRP
- 3 - D/CRP
- 4 - DDS&T Reg (w/e-att.)
- 5 - D/SA
- 6 - SAS/O/OSA
- 7 - D/O/OSA
- 8 - IDEA/O/OSA
- 9 - INTEL/O/OSA
- 10 - D/M/OSA
- 11 - R&D/OSA
- 12 - AMS/OSA
- 13 - RB/OSA

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Section I

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IDEALIST

DEVELOPMENT SUMMARY AND PROGRESS

(1 April 1970 - 30 June 1970)

I. AIRFRAME

A. Weight and Balance - Two articles, 053 and 054, have had Service Bulletins incorporated to relocate [redacted] thus alleviating nose loading. [redacted]

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B. Pinger - A test program is underway to evaluate the performance of a prototype dual frequency pinger to be used for locating downed aircraft in shallow ocean areas. Free field acoustical calibration tests and calibration with the pinger mounted in a section of aircraft structure have been completed in the sonar test tank. Sea range trials at pinger depths of 50 feet, 100 feet, and 200 feet began 22 June 1970. Battery life testing is also in progress.

C. U-2R Flight Test and Operational Training Summary

	<u>A. M. J.</u> <u>FLTS.</u>	<u>A. M. J.</u> <u>TIME</u>	<u>TOTAL</u> <u>FLTS.</u>	<u>TOTAL</u> <u>TIME</u>
1 - 051	19	82.3	211	669.0
2 - 053	24	112.5	181	694.4
3 - 054	24	75.8	206	684.4
4 - 055	25	102.0	237	754.2
5 - 057	44	137.9	279	947.6
6 - 058	<u>47</u>	<u>157.9</u>	<u>269</u>	<u>851.9</u>
TOTAL	183	668.4	1383	4601.5

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## II. PROPULSION

Flight service evaluation began on the first of two engines with improved combustion chamber crossover tubes. This modification is expected to improve high altitude engine restart capability. These engines will be inspected every 200 hours of operation for condition caused by normal operation. Upon satisfactory results of this service evaluation, all engines will be modified.

## III. PAYLOAD

A. "H" Camera - The "H" Camera at Detachment G successfully completed qualification tests using the new SO-349 film. This unit was then returned to the plant for scheduled service bulletin update and plant optical check.

B. IRIS II - The sixth and last IRIS II was declared Operationally Ready in April 1970. Work is continuing on a modified electronics encoder package which will permit operation of the various electronic packages (i. e. TACAN) simultaneously with operation of the IRIS II.

C. Thermal Stabilization - The TRAC-3-2 Preconditioning Unit was tested at Detachment G with the "H" camera installed in an aircraft. Preliminary results indicate that a thermal blanket may be required around the Q Bay to keep the physical size of the air conditioning unit to a minimum. Also, the cool-air flow rates required to effectively stabilize the camera will require larger size hatch ports than originally proposed.

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V. RESEARCH AND DEVELOPMENT

A. General R&D

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2. General Studies

a. U-2R Low Altitude Concept - Final analysis of the data derived from noise measurement tests confirmed the preliminary findings that the C-130E is quieter than an unmodified U-2R. Therefore, the low altitude U-2R concept is being removed from further consideration due to the potential problems associated with quieting of the propulsion system.

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b. Improved U-2R Navigation System - A reclama memo for the previously disapproved funding request was forwarded to the D/NRO accompanied by supporting explanatory comments on the arguments cited in the D/NRO disapproval memo. This resubmission was prepared with the concurrence of the D/NRO following conversations between the DD/NRO and the DD/SA.

d. Vibration Study - Work undertaken on the Dynamic Analyzer at Wright-Patterson AFB with the IRIS II was presented by WPAFB personnel at the RRB meeting at Project Headquarters in April 1970. The published report from the Air Force Avionics Laboratory, AFSC, WPAFB, Ohio, entitled "Dynamic Analysis Evaluation Report of IRIS II Camera System S/N 8008" and dated May 1970 (SECRET IDEALIST) was received by Project Headquarters on 25 June 1970. A cursory examination of the document indicates the report is comprehensive and has valid recommendations. The document is being studied in greater detail.

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2. Apochromatic Petzval Lens for DELTA III

a. A decision was made by NRO on 10 March 1970 to develop a 24 inch focal length apochromatic Petzval lens for the DELTA III. The basic purpose of such a lens is to fully test and exploit the capabilities of new color films that may be utilized in satellite and aeronautical reconnaissance systems.

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b. NRO requested OSA provide a contracting officer and a technical monitor to oversee their contract. OSA complied with this request. A contract was awarded to Itek and work was initiated in May 1970. The schedule calls for installation and laboratory tests of the lens in the DELTA III camera system by 20 July 1971.

## VI. LIFE SUPPORT ACTIVITIES

### B. Life Support Equipment

1. Ejection Systems - The R Model Ejection Seat tests, ejecting through the canopy to qualify the headrest height adapters, were accomplished during this reporting period. Tests were successful and a complete engineering report is expected from the contractor during the first quarter of FY 71.

2. New Equipment - Six sage-green 35 foot camouflaged parachute canopies are being packed for operational mission requirements. Two canopies will be at both Detachments G and H and two spares will be in storage at the prime contractor repack facility.

### 3. Developmental Efforts

a. R Model Ventilation - An engineering study of the U-2R ventilation system was accomplished at Detachment G. Initial indications are that if the water separator is by-passed, adequate cooling is provided the pilot during ground operations. If the modification is successful, installation of liquid oxygen coolers in the wheel well for ground operations will be unnecessary.

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b. Self-doffing Lanyard - Consideration is being given to removal of the self-doffing lanyard of the S1010 Pilot Protective Assembly (PPA) and storage of this item in a suit pocket. If it then becomes necessary for the pilot to remove his pressure suit, attachment of the lanyard could be accomplished. This lanyard has been of concern when inserting the pilot in the aircraft because it must be routed with extreme caution to prevent it from becoming entangled.

c. Six Line Release - A modification is being considered that will allow release of six risers to be released while descending with the RQ-225 parachute. This will provide the pilot more control of the descending parachute. Test jumps to date have proved promising.

d. S1010 PPA Integrated Harness - Removal of the two front harness pads and the installation of a chest strap on the S1010 PPA integrated harness is being considered. This modification will enable the pilot to make a better parachute landing fall and allow him easier access to the risers for control of the parachute.

C. Survival Training

1. Tropical and Seacoast Survival Training was conducted for two IDEALIST pilots [REDACTED] This tropical training area will no longer be suitable for survival training due to road building activities in the area. A new training area will be selected.

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IDEALIST

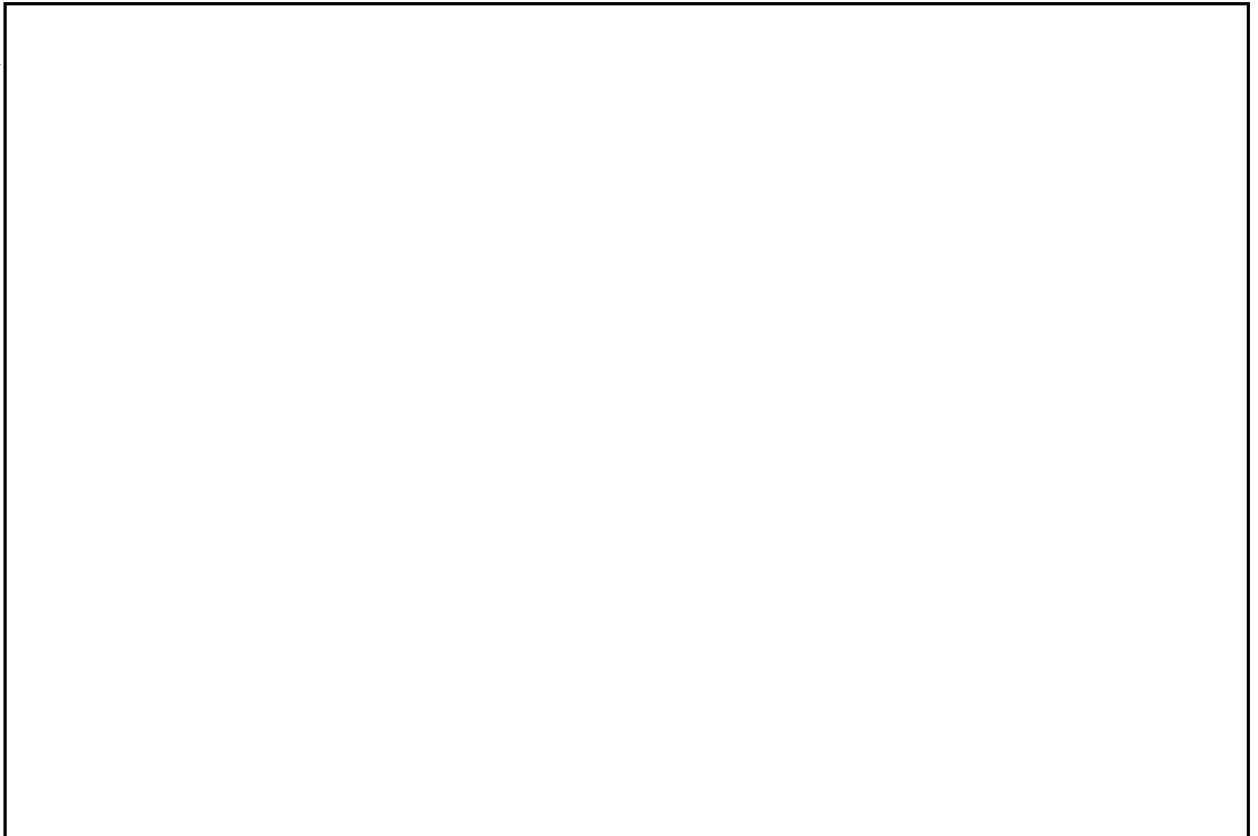
OPERATIONAL SUMMARY AND STATUS

(1 April 1970 - 30 June 1970)

I. OPERATIONAL MISSION SUMMARY

A. Four IDEALIST TACKLE operational missions were alerted during this period.

All missions were planned to operate a minimum of 20 nautical miles off the mainland China coast to comply with current restrictions. Following is a summary of the accomplished missions:



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## II. GENERAL

A. RED DOT. Film testing. Three missions were flown with various camera configurations in support of IDEALIST and other national reconnaissance programs. This is part of a continuing requirement to determine the usefulness of various film emulsions and filters under operational conditions.

B. RED DOT/Color Task Force. Eight missions were flown to photograph selected CONUS targets using black and white film and color film simultaneously for comparative analysis.

C. SNOW SURVEY. Five missions were flown in support of the Sierra Nevada water resources survey being conducted by the Environmental Science Services Administration of the Department of Commerce.

E. IRIS II. Twenty-five test and qualification missions were flown with this configuration.

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H. Hurricane Base Line. Five missions were flown to obtain photographic coverage of western U.S. Gulf Coast. The Office of Economic Preparedness will use this information as base line photography for assessment of hurricane damage claims.

I. Mirror Landing Practice (MLP). Four MLP sorties were flown to maintain pilot familiarity with this system. Each of the carrier qualified pilots flew one of these missions.

J. Camera Qualification ("A", "H"). Four test and qualification sorties were flown with these configurations.

L. Pilot Training. [redacted] completed 11 initial qualification flights.

III. PILOT AND AIRCRAFT STATUS (AS OF 30 JUNE 1970)

A. Detachment "G" (Edwards AFB - North Base)

Aircraft            4 U-2R  
                      1 U-2C  
                      2 U-2G (flyable storage)

Pilots              [redacted]

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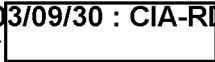
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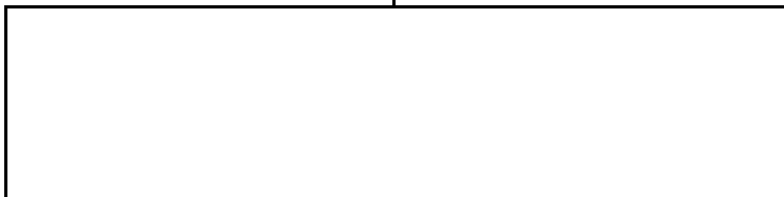
B. Detachment "H"

Aircraft

Pilots

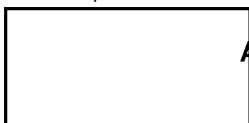
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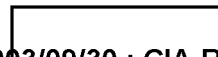


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